

CLAIMS:

1. A catheter which is intended especially for use in MR imaging and which includes

- a catheter sleeve (2),
- a hollow guide channel or lumen (3) within the catheter sleeve (2) for

5 receiving a medical instrument, and

- two electrical conductors (4) which are enclosed by a cable sheath (5) of a dielectric material and serve for the transmission of RF signals within the catheter sleeve (2), the dielectric material having a relative permittivity (ϵ_r) smaller than 4, the diameter of the electrical conductors (4) being between 5 and 50 μm , notably between 10 and 30 μm , and the
10 distance between the electrical conductor (4) being smaller than 300 μm , in particular smaller than 200 μm .

2. A catheter as claimed in claim 1, characterized in that the dielectric material has a relative permittivity which is smaller than 2.3, notably smaller than 1.5.

3. A catheter as claimed in claim 1, characterized in that the dielectric material is an aerated synthetic material, notably FP301040 or FP301020 as marketed by Good Fellow.

4. A catheter as claimed in claim 1, characterized in that the two electrical
20 conductors (4) are also arranged to conduct a direct voltage to the voltage supply of a medical instrument arranged on or in the catheter (1).

5. A catheter as claimed in claim 1, characterized in that it includes means for catheter localization during an intervention, notably at least one active coil (4, 5) which is
25 arranged on or in the catheter (1).

6. An MR device for forming MR images of an object to be examined, intended especially for intravascular interventional MR imaging, which device includes:

- a main field magnet system (16) for generating a homogeneous steady main magnetic field,

- a gradient coil system (17, 18, 19) for generating magnetic gradient fields,

- an RF coil system (14) for the exciting an examination zone,

5 - a receiving coil system (14, 12) for receiving MR signals from the examination zone,

- a catheter (1) as claimed in claim 1 for introducing a medical instrument into the object (10) to be examined, notably comprising an active coil (4, 5) which is arranged on or in the catheter (1) for the purpose of catheter localization, local excitation of the

10 examination zone and/or local reception of MR signals, and

- a control unit (23) for controlling the MR device.